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THE DESIGN OF A MAN-MACHINE COUNSELING SYSTEM. A PROFESSIONAL PAPER.

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TWO PROJECTS ON THE DESIGN, DEVELOPMENT, IMPLEMENTATION, AND EVALUATION OF A MAN-MACHINE SYSTEM FOR COUNSELING IN THE PALO ALTO AND LOS ANGELES SCHOOL DISTRICTS ARE REPORTED. THE EARLIER PHILCO 2000 COMPUTER PROGRAMS SIMULATED A COUNSELOR'S WORK IN THE EDUCATIONAL PLANNING INTERVIEW BY ACCEPTING INPUTS SUCH AS SCHOOL GRADES, TEST SCORES, AND BIOGRAPHICAL DATA. IT ANALYZED DATA ACCORDING TO AN INFERRED MODEL OF THE COUNSELOR'S DECISION-MAKING RULES, AND PRINTED OUT EVALUATIVE STATEMENTS. AN AUTOMATED EDUCATIONAL INTERVIEW PROGRAM NOW REVIEWS STUDENT PROGRESS, COLLECTS COMMENTS FROM THE STUDENT, REACTS TO STUDENT PLANS, AND HELPS PLAN A HIGH SCHOOL COURSE SCHEDULE. THE CURRENT PROJECT, IN THE INITIAL DESIGN PHASE, INCLUDED A SURVEY OF COUNSELOR PRACTICES, SELECTED AN EXPERIMENTAL FIELD SITE, ANALYZED COUNSELING OPERATIONS IN THE FIELD SITE, AND TRAINED COUNSELORS IN SYSTEMS TECHNOLOGY AND LAB DEVELOPMENT OF LIMITED SOFTWARE SYSTEMS. A PLAN WAS FORMULATED TO COMPUTERIZE THE MAJOR INFORMATION-PROCESSING TASKS IN THE COUNSELING OPERATION. THE DEVELOPMENT, IMPLEMENTATION, AND EVALUATION PHASES WILL FOLLOW. A SAMPLE INTERVIEW IS INCLUDED. THIS PAPER WAS PRESENTED AT THE AMERICAN PSYCHOLOGICAL ASSOCIATION CONVENTION, NEW YORK, N.Y., SEPTEMBER 4, 1966. (WR)

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ABSTRACT

This is the report of two projects on the design, development, implementation, and evaluation of a man-machine system for counseling. In the earlier work, two computer programs were produced to simulate a counselor's work in the educational planning interview. A program on the Philco 2000 computer, representing the preinterview appraisal, accepts inputs such as school grades, test scores, and biographical data; analyzes the data according to the inferred model of the counselor's decision-making rules; and prints out evaluative statements. An automated educational interview program (conducted by a teletype under control of the Q-32 computer in a time-sharing mode), reviews student progress, collects comments from the student, reacts to student plans, and helps the student plan a schedule of high school courses.

In the current work, the counseling operations at a large senior high school and a large junior high school in the Los Angeles School District have been analyzed. The counselors at the schools and the System Development Corporation research team have formulated a plan for using the computer to handle the major information processing tasks in the counseling operation. Plans include storage of all student data in the computer for easy processing and retrieval; tracking of students through their school progress by the computer to identify counseling problems; automated on-line generation and application of multiple prediction formulas; automated scheduling and automated generation of reports; and automated interviews to help students in the areas of course programming, post-high-school educational planning, and vocational exploration. Initial work on the computer programs is in progress. Next year machines will be installed in the schools and the system will be developed, implemented, and evaluated.

The Design of a Man-Machine Counseling System*

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INTRODUCTION

The work that I wish to describe has as its major objective the design, development, implementation, and evaluation of a man-machine system for counseling. By a man-machine counseling system, I mean a computer-based counseling operation that does basically two things: (1) If it has been properly designed, the system lets the computers and their peripheral equipment take care of processing and transmitting information (this is what they were designed to do), and (2) it thus frees the human beings in the system--the counselors--to be human and to facilitate human growth and awareness in the students they care about.

Human beings are capable of caring, understanding, being with, valuing the student's intuition and freedom of choice. Machines are not. Human beings can help students to value their own reactions to experiences and to choose to have those experiences that are personally relevant. Machines can not.

Current practice rarely allows the counselor to do this. Counselors are increasingly being caught up in the information-processing part of the job. They are involved in acquiring, recording, reporting, searching, processing, and transmitting information. Less and less time is being devoted to helping students to listen to--and trust--their own inner struggles, creative stirrings and potential for responsibility and decisions.

I will discuss our work at System Development Corporation in relation to two headings: Our earlier initial explorations in computer-assisted counseling, and our current work on the design of a man-machine counseling system.

INITIAL EXPLORATIONS IN COMPUTER-ASSISTED COUNSELING

Our initial work was partially supported by the Educational Media Branch of the U. S. Office of Education under NDEA Title VII.** In these first efforts we wanted to accomplish two major objectives: To show that much of what counselors

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*The research and development projects described herein were partially supported by Grant 7-14-9120-217 and Contract OE-6-85-076, Office of Education, U. S. Department of Health, Education and Welfare.

**See Cogswell, J. F. and Estavan, D. P., "Explorations in Computer-Assisted Counseling," System Development Corporation document, TM-2582/000/00, 6 August 1965, 29 pp.

currently do can be characterized in an information-processing model, and to demonstrate that a computer could be validly modeled to perform the information-processing task.

We first selected a counselor in the Palo Alto School District and obtained a sample of his work with 20 ninth-grade students. His work processes were divided into two steps for purposes of analysis: (1) Appraisal of the data in the student cumulative record prior to the interview; and (2) conduct of the educational planning interview.

The counselor was instructed to think aloud as he read through the data in the cumulative folder, analyzed the data, and formed hypotheses about the student. His verbalizations during this task were recorded, as were the dialogues between counselor and student in the educational planning interview.

The recordings were then transcribed and analyzed. A model of the counselor's decision rules in the folder appraisal task and another model of his behavior in the interview were defined for computer simulation.

The cumulative folder appraisal program was written for the Philco 2000 computer. This program accepts as inputs the data in the cumulative folder--grades, aptitude test scores, parents' occupations, etc.--analyzes these data, applies the programmed decision "rules" abstracted from the counselor's verbal behavior, and selects output statements such as the following:

> "Student's grades have gone down quite a bit. Ask about this in interview. Possibly there are personal problems."
>
> "Student should be watched closely. He will probably need remedial courses."
>
> "Student is a potential dropout."
>
> "Low counseling priority. No problems apparent."

The automated interview program was written for use on the Q-32 computer. Experience gained in formulating the folder appraisal program was helpful in the development of the automated interview; however, the latter program does not utilize data generated on the Philco 2000 but instead performs an independent folder inspection. In this interview, student-program interaction takes place through the medium of a teletypewriter connected to the computer. (Appendix A provides the actual printout of an interview that was conducted during the evaluation study described below.)

The interview goes through the following procedures. First, using conventional computer-based programmed instruction techniques, the student is given a 5-minute lesson on the use of the teletype. Next, the student's cumulative folder record is inspected, and the machine types out the student's courses

and grades for the last semester and asks the student to indicate courses in which he is having problems. If the student specifies problem courses, the machine asks him to type, in his own words, a description of the problem for each course. These descriptions are stored on magnetic tape and later are printed out on an off-line printer. The printouts are sent to the counselor.

After the student has described his problems, the machine asks him whether he would like to stop the interview and see his counselor or whether he would like to continue. If he continues, his goals are then explored. The machine asks if the student plans to go to college and if so, the program assists him in selecting the type of college he hopes to attend. If he does not choose college, the student and the computer explore other alternatives in order to establish the student's vocational interests.

Following the selection of college or vocation, the machine assists the student in determining his college major or otherwise specifying his exact field of interest. The student is then given a printout indicating his probable grades in high school and his chance of success in his chosen activity. These predictions are based on statistics accumulated by the Palo Alto School System.

The machine then requests that the student select courses for 10th, 11th, and 12th grades. The computer evaluates the student's choices and advises him regarding required courses, appropriate course loads, and the relevance of his electives to his chosen major.

Throughout the interview, records are kept by the program and, based on the student-program interaction, messages are composed for printout and transmittal to a counselor at the conclusion of the interview.

After development of the automated interview, a study of the validity of the model was conducted: A teletype was placed in one of the junior high schools in Palo Alto and connected by phone line to the Q-32 computer in Santa Monica; and forty students, randomly selected from the 1964-65 ninth-grade class, were given the automated counseling interview on the teletype. In addition, the data from the cumulative records were read into the Philco 2000 computer and were analyzed by the program that simulated the counselor's appraisal behavior.

Twenty of the students had their records analyzed by the same counselor whom we had originally studied; they were also interviewed by the counselor. The remaining 20 students had their records analyzed by a second counselor and were interviewed by him; the data from these analyses and interviews enabled us to make some estimate of the generalizability of the automated routine.

The findings indicated that the automated cumulative data appraisal program produced 75% of the same substantive statements that the counselors produced. A simple correction to one of the rules in the program would have greatly decreased the error.

The automated interview and the human interview were comparable in respect to the colleges selected, the major selected, and the evaluation of the "appropriateness" of the students' choices. Beyond that, the study indicated that the automated procedures for helping the students to select courses for high school would require further development to provide the same service as the counselors. There were no marked differences between the two human counselors.

After all 40 students had been given the automated interviews and had been interviewed by one of the two counselors, their attitudes toward the humans and the machine were studied by standard interview questions. There were no marked preferences for either machine or human as far as the group of students as a whole was concerned. However, there were marked individual differences. Some students clearly preferred the machine. Others preferred the counselor.

In short, our early work* led us to conclude that a significant portion of what counselors are now doing is the processing and transmitting of information, and that computers can be used to perform at least a part of this task. Our findings increased our hope that much of the burden of processing and transmitting information could be transferred to the machine and that the counselors could be freed to be more humanistic. We were led to push our explorations further.

CURRENT WORK IN THE DESIGN OF A MAN-MACHINE COUNSELING SYSTEM

Our current work on the design of a man-machine counseling system is being supported by the Division of Adult and Vocational Research of the U. S. Office of Education.

The study, which will take from three to five years, is divided into three phases:

- The initial Design Phase, which will focus on the specifications for the man-machine system.
- The Development and Implementation Phase, during which machines will be installed at a field site and the operating procedures will be developed.
- The Evaluation Phase, in which the changes to the system will be evaluated.

Funding has been obtained for the first phase.

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*In the work just described, people who participated other than the authors were: Dr. John Loughary, Oregon System of Higher Education; Mr. Robert Hurst, and Mr. Donald Friesen, University of Oregon.

THE INITIAL DESIGN PHASE

The first phase includes six steps: (1) an initial survey of counselor practices; (2) selection of an experimental field site; (3) system analysis of the counseling operations in the field site; (4) training of the counselors in system technology; (5) design specifications for the Man-Machine Counseling System; and (6) laboratory development of limited software systems.

Survey of Counselor Practice

Eighty-seven counselors from 12 different educational settings were interviewed to obtain a picture of the variation in counseling practice from installation to installation. In addition, each counselor described, by using a set of Q-sort cards, how he was actually spending his time and how he would ideally like to spend his time. The educational settings included vocational high schools, trade schools, junior colleges, and academic high schools.

Analysis of the Q-sort data indicates that there are no significant differences, between one site and another, in the kinds of responses as a whole. However the data do indicate a marked difference between what the counselors are doing and what they would like to do: As a group they would prefer to reduce greatly the amount of time that they must devote to routine information processing tasks such as registration, schedule changes, program requests, analysis of routine data, recording of data, report writing, collecting and updating occupational information and test administration. They would prefer to be able to increase the time they devote to working with students in such activities as "helping students, through group and individual counseling, to explore their problems, feelings, and courses of action." They would like more time for following up their students, working with administrators in improving curricula to meet the needs of students, and conducting research. They would like to see an increase in the use of data processing equipment, presumably to lift the information-processing task from their shoulders.

The findings from the survey support our belief that counselors are forced to spend too much time with information-processing chores; that, ideally, they would like to change their activities in the humanistic direction of working more with students directly or indirectly; and that they would like to alter the system to better meet the needs of the students.

Selection of the Experimental Field Site

After the collection of survey data, an experimental field site was selected. We chose as the focus for our experimentation a large high school/junior high school complex in the Los Angeles School District. The high school has a population of 5,000 students and 10 counselors; the junior high has 1,800 students and five counselors.

System Analysis of Counseling Procedures

A detailed description of all of the counseling procedures employed at this school complex was obtained by interviewing all of the 15 counselors.

General flow of procedures for each of the two counseling subsystems was defined. In addition, the idiosyncratic functions and procedures of each counselor were described. These descriptions were reviewed by the counselors to clear up omissions and misconceptions.

Training of Counselors

After the system analysis, the counselors came to System Development Corporation for three 2-hour workshops on advanced information-processing technology. The purpose of the workshops was to teach the counselors about the kinds of functions that could be performed by advanced information-processing technology. We wanted them to be aware of the possibilities so that their thinking in the design phase would not be limited by lack of exposure to the technology. We presented a number of demonstrations of automated interviewing, automated teaching, and on-line computer applications in information retrieval. Discussion and readings were combined with the demonstrations.

The Initial Design Workshops

When the training was completed, the counselors and the four experimenters worked together in formulating the specifications for the initial model of the man-machine system.

The research staff met for 21 hours with the high school counselors and for 12 hours with the junior high counselors. A consultant from the National Training Laboratory--Dr. Gerard Haigh--attended most of the meetings with the high school counselors and focused his attention on facilitating the communication process during the design work. He was effective in keeping the group from fracturing, in increasing the involvement and participation of all of the members, and in strengthening the group process. The last design day was conducted as a 12-hour marathon with the high school counselors. The research staff considered this procedure extremely effective, although they had been skeptical at the beginning. A strong group feeling developed between the counselors and the researchers, and the design ideas that emerged were identified as the product of the total design team rather than ideas of the researchers or of the counselors. One evidence of the group feeling was the reluctance experienced by group members about breaking up the group at the beginning of the summer vacation period.

A number of ideas for the system were developed in the design workshops. Briefly they are as follows:

- Storage of all student data in the computer for ready processing and retrieval.
- Tracking and monitoring of student progress to alert counselors to possible problems.
- On-line generation and application of multiple regression formulas for predictive and research analysis.
- Automated generation of all routine reports such as grade reports, progress reports.
- Automated interviews to help students in the areas of post-high-school planning, course programming, and vocational exploration.

Laboratory Development of Systems

Laboratory demonstrations of some of these information-processing procedures are being developed. Work is currently progressing on the development of the information storage and retrieval system and on an automated interview for exploring occupations and related educational requirements.

Our design work with the counselors will resume in the fall.

DEVELOPMENT, IMPLEMENTATION, AND EVALUATION

In the spring of 1967 the specifications for the Model I machine and human functions will be crystallized into a proposal for the second phase of the project. In this phase the information-processing applications will be developed and implemented. The counselors will be trained in system procedures; in addition, a counselor training program, including sensitivity training, will probably be developed and used to strengthen counselor skills in the human aspects of their work. The counselors will then use the system and evaluate it.

When the system has been implemented and is operating smoothly, the final evaluation data will be collected for the project's third phase.

It is hoped that both the system development procedures employed in this study and the operational innovations will provide a useful model for the development of man-machine counseling systems in other installations.

APPENDIX A

COPY OF SAMPLE INTERVIEW

YOU ARE ABOUT TO PARTICIPATE IN AN INTERVIEW WITH AN
AUTOMATED COUNSELOR.
THE COMPUTER WILL HELP YOU PLAN WHAT YOU WANT
TO DO IN HIGH SCHOOL AND IN LATER LIFE.
BUT FIRST, JUST TO LET THE COMPUTER KNOW YOU ARE THERE
PLEASE TYPE THE LETTER A AND A CARRIAGE RETURN
(RED KEY ON THE RIGHT-HAND SIDE OF THE KEYBOARD).

**** A
GOOD...
THE MOST IMPORTANT KEY IS THE CR KEY (RED KEY ON THE RIGHT).
YOU WILL USE IT TO LET THE COMPUTER KNOW THAT YOU HAVE MADE
AN ANSWER. JUST FOR PRACTICE, TYPE THE LETTER B AND CR (RED KEY).

**** B
OK.....
SOMETIMES YOU WILL BE ASKED TO ANSWER A YES OR NO QUESTION.
WHEN YOU ARE, JUST TYPE YES OR NO AND A CR
DON'T FORGET THE CR.
LET'S TRY IT. HERE IS A QUESTION---
ARE YOU IN CALIFORNIA NOW?
PLEASE TYPE YES OR NO.

**** YES
FINE..

MANY OTHER PEOPLE ARE USING THIS COMPUTER RIGHT NOW.
ONCE IN A WHILE THE COMPUTER WILL HAVE TO TAKE CARE OF THEIR
URGENT NEEDS. WHEN THIS HAPPENS, YOU MAY FIND THAT YOU
HAVE TO WAIT A MOMENT OR TWO. DON'T WORRY, THE COMPUTER WILL
COME BACK TO TAKE CARE OF YOU AS SOON AS IT CAN.
WHEN YOU HAVE READ THIS, TYPE OK AND CR.

**** OK
GOOD.
BY NOW YOU HAVE NOTICED THAT BEFORE YOU TYPE AN ANSWER,
THE TYPEWRITER TYPES STARS LIKE THIS-

****
THIS IS TO LET YOU KNOW THAT IT IS TIME FOR YOU TO TYPE
SOMETHING. YOU SHOULD NEVER TYPE ANYTHING UNTIL AFTER THE STARS
ARE TYPED OUT BY THE COMPUTER.
DO YOU UNDERSTAND?
PLEASE TYPE YES OR NO.

```
**** YES
ANOTHER VERY IMPORTANT KEY IS THE  /  OR ''SLASH'' KEY.
IT IS THE GREEN KEY ON THE BOTTOM RIGHT OF THE KEYBOARD.
LOOK FOR THE  /  KEY (GREEN KEY).  WHEN YOU FIND IT,
TYPE  /  AND  CR.

**** /
SOMETIMES YOU WILL HAVE TO TYPE MORE THAN ONE LINE AND THE
COMPUTER CANNOT TELL IN ADVANCE HOW MANY LINES YOU WILL TYPE.
IN SUCH A CASE, YOU WILL LET THE COMPUTER KNOW THAT YOU HAVE
FINISHED BY TYPING  /  AND  CR.
WHAT YOU TYPE WILL LOOK SOMETHING LIKE THIS---

**** 1

**** 2

**** /

LET'S TRY IT.
TYPE  1 AND  CR,  2  AND  CR, AND  /  AND  CR.
(WAIT FOR THE STARS.)

**** 1

**** 2

**** /
FINE..

PLEASE TYPE YOUR ID NUMBER AND A CR

**** 42
ONE MOMENT, PLEASE.

IS YOUR NAME  DEBORA ANDERSON

**** YES
ACCORDING TO MY RECORDS THIS IS HOW YOU DID LAST SEMESTER.
  CODE    COURSE            GRADE
    1   P.E.                A
    2   ENGLISH 1           A
    3   GENERAL SCIENCE     A
    4   EUROPEAN HISTORY    C
    5   ALGEBRA             B
    6   SCHOOL SERVICE      A

IS THIS CORRECT?  IF SO, TYPE  YES  IF NOT, TYPE  NO
```

**** YES
ARE YOU HAVING ANY PROBLEMS WITH ANY OF THESE COURSES?
PLEASE TYPE YES OR NO.

**** YES
TYPE THE NUMBER OF EACH COURSE THAT IS GIVING YOU TROUBLE.
TYPE CR AFTER EACH NUMBER.
WHEN YOU ARE ALL THROUGH, TYPE / AND CR.

**** 4

**** /
WHAT KIND OF PROBLEM DO YOU HAVE WITH EUROPEAN HISTORY
PLEASE TYPE IN THE NATURE OF THE PROBLEM. A FEW WORDS WILL BE O.K.
WHEN YOU ARE ALL FINISHED, TYPE / AND CR.

**** I DON'T TURN MY WORK IN ON TIME./
I SEE...
IF YOU WOULD LIKE TO DISCUSS THIS PROBLEM FURTHER,
MAKE AN APPOINTMENT TO SEE YOUR COUNSELOR.

WOULD YOU LIKE TO CONTINUE WITH THIS INTERVIEW AT THIS TIME, OR WOULD
YOU LIKE TO DISCUSS YOUR PROBLEMS WITH YOUR COUNSELOR BEFORE YOU CONTINUE?
TYPE GO IF YOU'D LIKE TO CONTINUE. TYPE STOP IF YOU'D LIKE TO STOP.

**** GO
DO YOU PLAN TO CONTINUE YOUR FORMAL EDUCATION BEYOND HIGH SCHOOL?

**** YES
WHICH OF THE FOLLOWING IS MOST LIKE THE SCHOOL YOU PLAN TO ATTEND?
1 IVY LEAGUE COLLEGE
2 OTHER COLLEGE OR UNIVERSITY
3 CALIFORNIA STATE COLLEGE
4 JUNIOR COLLEGE
5 BUSINESS OR VOCATIONAL SCHOOL
6 I HAVE NOT YET DECIDED
TYPE THE APPROPRIATE CODE.

**** 3
DO YOU INTEND TO MAJOR IN ENGINEERING OR ONE OF THE SCIENCES?
PLEASE TYPE YES OR NO.

**** YES
HERE ARE SOME AREAS OF SCIENCE AND SOME EXAMPLES

CODE	AREA	EXAMPLES
1	PHYSICAL SCIENCES.....	PHYSICS, CHEMISTRY, GEOLOGY, ETC.
2	BIOLOGICAL SCIENCES...	BIOLOGY, PRE-MED, PRE-NURSING, ETC.
3	SOCIAL SCIENCES.....	PSYCHOLOGY, SOCIOLOGY, ANTHROPOLOGY, ETC.
4	MATHEMATICS.....	MATH, STATISTICS, COMPUTER PROGRAMMING, ETC.
5	ENGINEERING.....	ARCHITECTURE, DRAFTING, ELECTRONICS, ETC.

PLEASE TYPE THE CODE NUMBER OF THE KIND OF SCIENCE YOU INTEND
TO MAJOR IN.

**** 3
ALRIGHT. LET'S SEE IF WE CAN PINPOINT YOUR AREA
1 PSYCHOLOGY
2 SOCIOLOGY
3 ANTHROPOLOGY
4 SOCIAL WORK
TYPE THE APPROPRIATE CODE.

**** 1
OK.....
THE GRADES YOU GET IN HIGH SCHOOL LARGELY DETERMINE THE TYPE OF
COLLEGE YOU WILL BE ABLE TO ATTEND.
LET'S JUST TAKE A LOOK AT YOUR PROJECTED HIGH SCHOOL GRADES
BASED ON YOUR PRESENT PERFORMANCE.
STUDENTS WHO GOT GRADES LIKE YOURS IN JUNIOR HIGH,
DID AS FOLLOWS AT CUBBERLEY---

70 PER CENT EARNED A OR B
20 PER CENT EARNED C+
10 PER CENT EARNED C

ON THE BASIS OF YOUR PROJECTED GRADES, YOUR PRESENT COLLEGE CHOICE
INDICATES THAT YOU ARE THINKING PRETTY REALISTICALLY ABOUT YOUR
FUTURE LIFE.

NOW THAT WE'VE GOT SOME IDEA OF WHAT YOU'D LIKE TO DO
AFTER HIGH SCHOOL, LET'S LOOK AT YOUR HIGH SCHOOL COURSE PLANS.
IN THE 10TH GRADE, THE REQUIRED COURSES ARE---

ENGLISH 2
CONTEMPORARY WORLD HISTORY AND GEOGRAPHY
PHYSICAL EDUCATION

WHAT OTHER COURSES WOULD YOU LIKE TO TAKE NEXT YEAR?
LOOK AT THE LIST OF COURSES.
WHEN YOU HAVE DECIDED WHAT COURSES YOU WANT TO TAKE, TYPE YES.
IF YOU CAN'T MAKE UP YOUR MIND AT ALL TYPE NO

**** YES
GOOD.
TYPE THE CODE NUMBER OF EACH COURSE YOU WANT TO TAKE.
TYPE CR AFTER EACH NUMBER.
WHEN YOU ARE ALL THROUGH, TYPE / AND CR.

**** 70

**** 93

**** 111

**** /
OK, HERE IS THE PROGRAM YOU HAVE PROPOSED

  ENGLISH 2
  CONTEMPORARY WORLD HISTORY AND GEOGRAPHY
  PHYSICAL EDUCATION

  FRENCH 1
  MATH M 1
  BIOLOGY 1

ARE YOU SATISFIED WITH THIS PROGRAM?
IF SO, TYPE YES
IF YOU WOULD LIKE TO CHANGE IT, TYPE CHANGE

**** YES
OK.....
THAT LOOKS LIKE A PRETTY GOOD 10TH GRADE PROGRAM.
DO YOU ANTICIPATE TAKING ANY SUMMER COURSES THAT YEAR?

**** NO
OK.....
AT THE 9TH GRADE YOUR PROJECTED 11TH AND 12TH GRADE SCHEDULE IS
CONSIDERED TO BE TENTATIVE. FIRM DECISIONS CAN BE MADE
ONLY ON THE BASIS OF YOUR YEAR BY YEAR PERFORMANCE.
WHAT YOU DECIDE TO TAKE IN THE 11TH AND 12TH GRADES
WILL BE GOVERNED LARGELY BY WHAT IT IS YOU WANT TO DO AFTER
HIGH SCHOOL. SINCE A PERSON'S PLANS TEND TO CHANGE OVER A
PERIOD OF TIME, YOU SHOULD SEE YOUR COUNSELOR TOWARD THE END OF
YOUR 10TH YEAR IN ORDER TO EVALUATE YOUR 11TH AND 12TH
GRADE PROGRAM IN THE LIGHT OF YOUR CURRENT GOALS.

ALTHOUGH WE WILL BE TALKING ABOUT TENTATIVE PLANS, WHICH YOU WILL BE
ABLE TO CHANGE, LET'S LOOK AT YOUR HIGH SCHOOL COURSE PLANS AS
YOU SEE THEM NOW.

LET'S THINK ABOUT THE 11TH GRADE.

THE REQUIRED COURSES FOR THE 11TH GRADE ARE---

  ENGLISH 3
  U.S. HISTORY
  P.E.

```
WHAT OTHER COURSES WOULD YOU LIKE TO TAKE IN THE 11TH GRADE?
LOOK AT THE LIST OF COURSES.
WHEN YOU HAVE DECIDED WHAT COURSES YOU WANT TO TAKE, TYPE  YES.
IF YOU CAN'T MAKE UP YOUR MIND AT ALL TYPE  NO

****  YES
GOOD.
TYPE THE CODE NUMBER OF EACH COURSE YOU WANT TO TAKE.
TYPE    CR  AFTER EACH NUMBER.
WHEN YOU ARE ALL THROUGH, TYPE   /   AND   CR.

****  71

****  96

****  43

****  /
OK, HERE IS THE PROGRAM YOU HAVE PROPOSED

  ENGLISH 3
  U.S. HISTORY
  P.E.

  FRENCH 2
  MATH M 25
  CREATIVE WRITING 1

ARE YOU SATISFIED WITH THIS PROGRAM?
IF SO, TYPE  YES
IF YOU WOULD LIKE TO CHANGE IT, TYPE  CHANGE

****  YES
OK.....
THAT LOOKS LIKE A REASONABLE 11TH GRADE PROGRAM.
DO YOU ANTICIPATE TAKING ANY SUMMER COURSES THAT YEAR?

****  YES
GOOD.  TYPE THE CODES OF THOSE COURSES YOU WILL TAKE IN THE SUMMER.
TYPE   CR  AFTER EACH NUMBER.
WHEN YOU ARE ALL THROUGH, TYPE   /  AND   CR.

****  130
```

**** /
AIRIGHT. THAT MEANS THAT IN SUMMER SCHOOL YOU WILL TAKE---

    DRIVER EDUCATION
NOW LET'S THINK ABOUT THE 12TH GRADE.
THE REQUIRED COURSES FOR THE 12TH GRADE ARE---

    GOVERNMENT 2
    PHYSICAL EDUCATION

(ENGLISH 4 IS NOT REQUIRED, BUT YOU MAY WANT TO TAKE IT.)

WHAT OTHER COURSES WOULD YOU LIKE TO TAKE IN THE 12TH GRADE?
LOOK AT THE LIST OF COURSES.
WHEN YOU HAVE DECIDED WHAT COURSES YOU WANT TO TAKE, TYPE YES.
IF YOU CAN'T MAKE UP YOUR MIND AT ALL TYPE NO

**** YES
GOOD.
TYPE THE CODE NUMBER OF EACH COURSE YOU WANT TO TAKE.
TYPE CR AFTER EACH NUMBER.
WHEN YOU ARE ALL THROUGH, TYPE / AND CR.

**** 72

**** 64

**** /
OK, HERE IS THE PROGRAM YOU HAVE PROPOSED

    GOVERNMENT 2
    PHYSICAL EDUCATION

    FRENCH 3
    GIRL'S WOODWORK S

ARE YOU SATISFIED WITH THIS PROGRAM?
IF SO, TYPE YES
IF YOU WOULD LIKE TO CHANGE IT, TYPE CHANGE

**** YES
OK.....
THAT'S A PRETTY GOOD 12TH GRADE PROGRAM.
DO YOU ANTICIPATE TAKING ANY SUMMER COURSES THAT YEAR?

**** NO
IT IS A GOOD IDEA FOR ALL COLLEGE BOUND STUDENTS TO TAKE 4 YEARS
OF ENGLISH. GIVE THIS SOME THOUGHT.

I HOPE THIS INTERVIEW HAS PROVIDED YOU WITH SOME INFORMATION
TO THINK ABOUT IN PLANNING YOUR HIGH SCHOOL PROGRAM.
IT'S BEEN NICE INTERACTING WITH YOU.
THANK YOU, DEBBIE
THIS IS THE END OF THE INTERVIEW